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## Central venous catheter in the internal mammary vein

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TITLE: Central venous catheter in the internal mammary vein

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**Image Text:**

Left-sided central venous catheterization has several pitfalls. Malposition may occur despite proper insertion technique. Pictured here, a multi-lumen access catheter (sheath) with triple-lumen insert was placed by Seldinger technique after left internal jugular vein puncture. While initially freely mobile, the J-tip guidewire encountered resistance at 20 cm depth. The catheter advanced smoothly over the guidewire after dilation. Once secured, two distal ports would not aspirate; the remaining ports aspirated blood. A central venous waveform was transduced from the functioning ports, which were infused without complication. Chest radiography (Panel A) reveals the sheath position (arrowheads) with catheter tip (blue arrow) below the clavicle, concerning for **abnormal intravascular versus** intrapleural placement. **Sternotomy wires, prosthetic valves, left pleural effusion, and an aortic stent graft are also visualized.** Computed tomography angiography demonstrates cannulation of the left internal mammary vein (LIMV) without vessel injury (Panels B, axial and C, sagittal). The catheter runs alongside the left internal mammary artery (red arrows).

Anomalous vessel cannulation from left-sided supracaval approach occurs more frequently than right-sided. The left innominate vein returns at an oblique angle to the superior vena cava (SVC) and has tributary vessels (e.g., LIMV) which catheters may cannulate.<sup>1,2</sup> Risk factors include persistent left SVC, prior vascular surgery, tumors, and anomalous venous drainage.<sup>1</sup> Resistance to guidewire advancement or inability to aspirate blood from distal ports may indicate anomalous cannulation. High central venous pressure transduction and greater than four insertion attempts portend malposition.<sup>3</sup> **Partially withdrawing the sheath and rewiring under fluoroscopic guidance may offer a salvage technique.**

**References**

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